TRANSYS ELECTRONICS LIMITED

1SMA4741 THRU 1SMA200Z

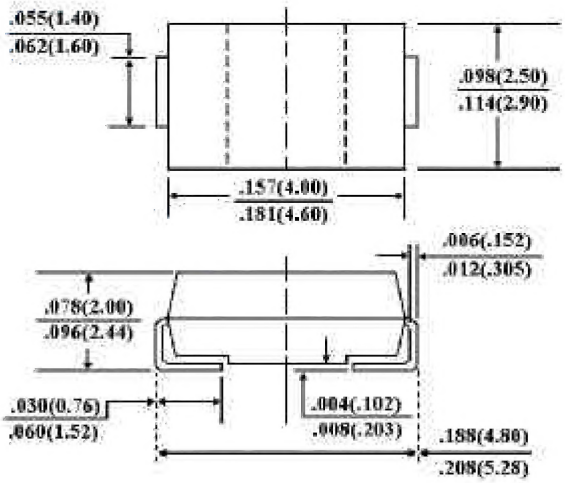
SURFACE MOUNT SILICON ZENER DIODE

VOLTAGE - 11 TO 200 Volts Power - 1.0 Watts

FEATURES

- For surface mounted app cations in order to optimize board space
- Low prof e package
- Built-in strain re ef
- Glass passivated junction
- Low inductance
- Typical I_R less than 5.0 £gA above 11V
- High temperature soldering : 260 ¢J/10 seconds at terminals
- Plastic package has Underwriters Laboratory Flammabi ty Classification 94V-O

DO-214AC



Dimensions in inches and (millimeters)

MECHANICAL DATA

Case: JEDEC DO-214AC, Molded plastic over passivated junction

Terminals: Solder plated, solderable per MIL-STD-750, method 2026

Polarity: Color band denotes positive end(cathode)

Standard Packaging: 12mm tape(EIA-481)

Weight: 0.002 ounce, 0.064 gram

MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Ratings at 25 ¢J ambient temperature unless otherwise specified.

	SYMBOL	VALUE	UNITS
Peak Pulse Power Dissipation on T_A=50 ¢J(Note A) Derate above 50 ¢J	P_D	1.0 6.67	Watts mW/¢J
Peak forward Surge Current 8.3ms single half sine-wave superimposed on rated load(JEDEC Method) (Note B)	I_{FSM}	10	Amps
Operating Junction and Storage Temperature Range	T_J,T_{STG}	-55 to +150	¢J

NOTES:

A. Mounted on 5.0mm^2(.013mm thick) land areas.

B. Measured on 8.3ms, single half sine-wave or equivalent square wave, duty cycle = 4 pulses per minute maximum.

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*ELECTRICAL CHARACTERISTICS (T_A=25 ¢J unless otherwise noted) V_F=1.2V max, I_F=200mA for all types.

Type No. (Note 1.)	Nominal Zener Voltage Vz @ I_{ZT} volts (Notes2. & 3.)	Test current I_{ZT} mA	Maximum Zener Impedance (Note 4.)			Leakage Current		Surge Current @ T_A=25 ¢J Ir - mA (Note 5.)	Device Marking Code
			Z_{ZT} @ I_{ZT} Ohms	Z_{Zk} @ I_{ZK} Ohms	I_{ZK} mA	I_R £g A Max	V_R Volts		
1SMA4741	11	23	8.0	700	0.25	5.0	8.4	414	741B
1SMA4742	12	21	9.0	700	0.25	5.0	9.1	380	742B
1SMA4743	13	19	10	700	0.25	5.0	9.9	344	743B
1SMA4744	15	17	14	700	0.25	5.0	11.4	304	744B
1SMA4745	16	15.5	16	700	0.25	5.0	12.2	285	745B
1SMA4746	18	14	20	750	0.25	5.0	13.7	250	746B
1SMA4747	20	12.5	22	750	0.25	5.0	15.2	225	747B
1SMA4748	22	11.5	23	750	0.25	5.0	16.7	205	748B
1SMA4749	24	10.5	25	750	0.25	5.0	18.2	190	749B
1SMA4750	27	9.5	35	750	0.25	5.0	20.6	170	750B
1SMA4751	30	8.5	40	1000	0.25	5.0	22.8	150	751B
1SMA4752	33	7.5	45	1000	0.25	5.0	25.1	135	752B
1SMA4753	36	7.0	50	1000	0.25	5.0	27.4	125	753B
1SMA4754	39	6.5	60	1000	0.25	5.0	29.7	115	754B
1SMA4755	43	6.0	70	1500	0.25	5.0	32.7	110	755B
1SMA4756	47	5.5	80	1500	0.25	5.0	35.8	95	756B
1SMA4757	51	5.0	95	1500	0.25	5.0	38.8	90	757B
1SMA4758	56	4.5	110	2000	0.25	5.0	42.6	80	758B
1SMA4759	62	4.0	125	2000	0.25	5.0	47.1	70	759B
1SMA4760	68	3.7	150	2000	0.25	5.0	51.7	65	760B
1SMA4761	75	3.3	175	2000	0.25	5.0	56.0	60	761B
1SMA4762	82	3.0	200	3000	0.25	5.0	62.2	55	762B
1SMA4763	91	2.8	250	3000	0.25	5.0	69.2	50	763B
1SMA4764	100	2.5	350	3000	0.25	5.0	76.0	45	764B
1SMA110Z	110	2.3	450	4000	0.25	5.0	83.6	-	110Z
1SMA120Z	120	2	550	4500	0.25	5.0	91.2	-	120Z
1SMA130Z	130	1.9	700	5000	0.25	5.0	98.8	-	130Z
1SMA150Z	150	1.7	1000	6000	0.25	5.0	114.0	-	150Z
1SMA160Z	160	1.6	1100	6500	0.25	5.0	121.6	-	160Z
1SMA180Z	180	1.4	1200	7000	0.25	5.0	136.8	-	180Z
1SMA200Z	200	1.2	1500	8000	0.25	5.0	152.0	-	200Z

NOTE:

1.Tolerance and Type Number Designation. The type numbers sted have a standard tolerance on the nominal zener voltage of ¡Ó5%.

2.Specials Ava able Include:

A. Nominal zener voltages between the voltages shown and tighter voltage tolerances.

B. Matched sets.

3.Zener Voltage (V_Z) Measurement. Guarantees the zener voltage when measured at 90 seconds wh e maintaining the lead temperature (T_L) at 30 ¢J¡Ó1 ¢J, from the diode body.

4.Zener Impedance (Z_Z) Derivation. The zener impedance is derived from the 60 cycle ac voltage, which results when an ac current having an rms value equal to 10% of the dc zener current (I_{ZT} or I_{ZK}) is superimposed on I_{ZT} or I_{ZK}.

5.Surge Current (I_r) Non-Repetitive. The rating listed in the electrical characteristics table is maximum peak, non-repetitive, reverse surge current of 1/2 square wave or equivalent sine wave pulse of 1/120 second duration superimposed on the test current, I_{ZT}, per JEDEC registration; however, actual device capab ity is as described in Figure 5.

RATING AND CHARACTERISTICS CURVES
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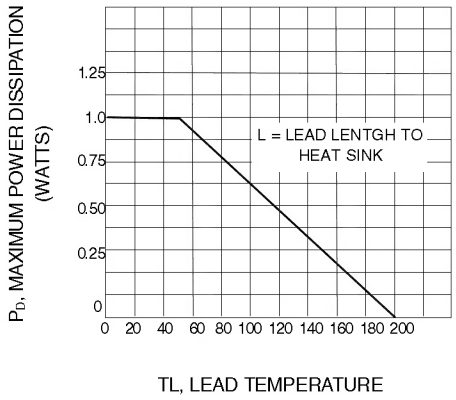

Fig. 1-POWER TEMPERATURE DERATING CURVE

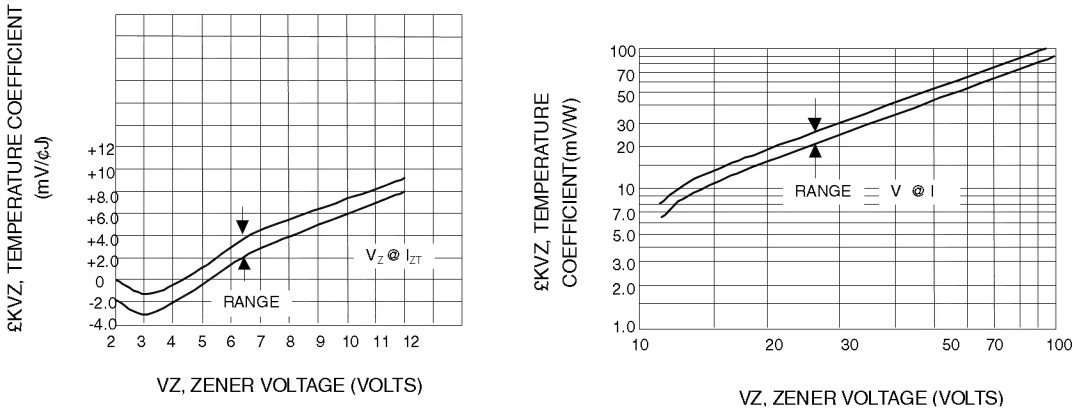

Fig. 2-TEMPERATURE COEFFICIENTS
(-55 ¢J TO +150 ¢J TEMPERATURE RANGE; 90% OF THE UNITS ARE IN THE RANGES INDICATED.)

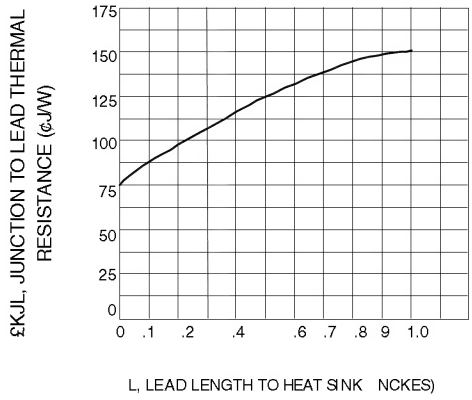

Fig.3-TYPICAL THERMAL RESISTANCE VERSUS LEAD LENGTH

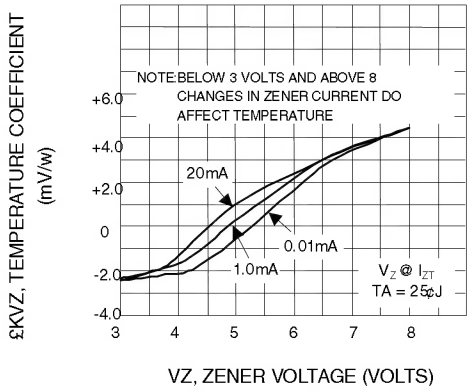

Fig. 4-EFFECT OF ZENER CURRENT

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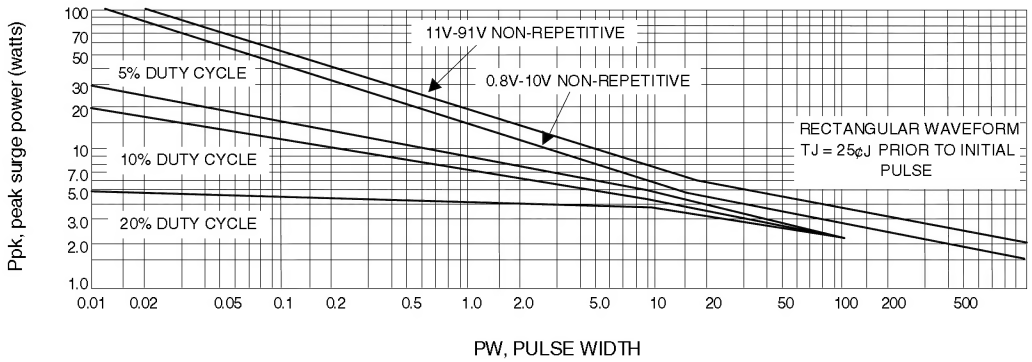

This graph represents 90 percentile data point.
For worst-case design characteristics, multiply surge power by 2/3

Fig. 5-MAXIMUM SURGE POWER

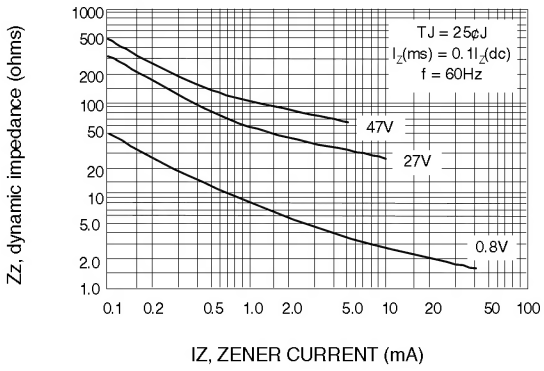

Fig. 6-EFFECT OF ZENER CURRENT ON ZENER IMPEDANCE

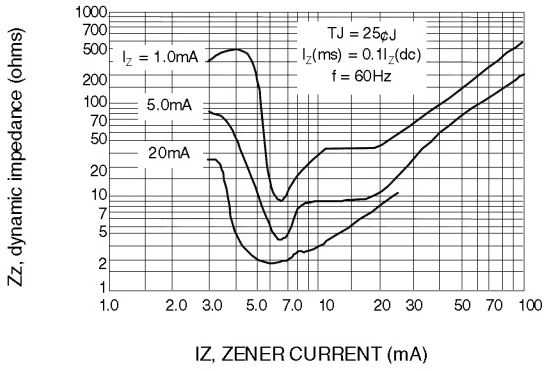

Fig. 7-EFFECT OF ZENER VOLTAGE ON ZENER IMPEDANCE

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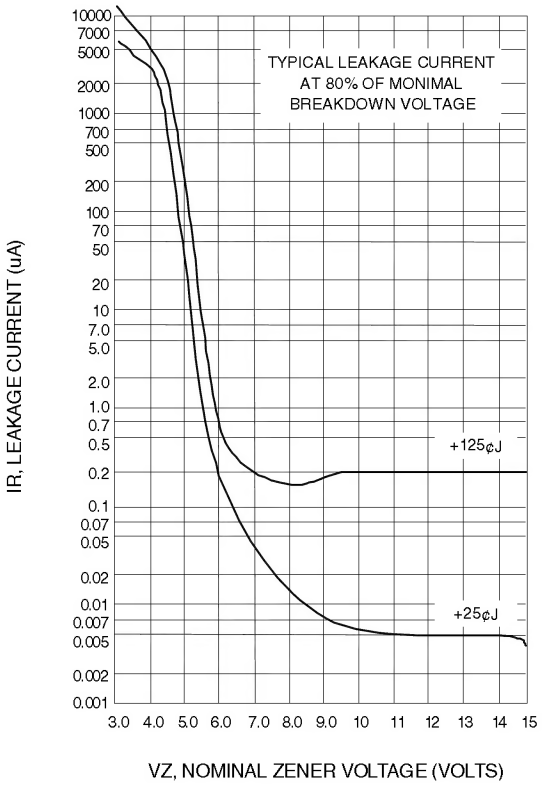

Fig. 8-TYPICAL LEAKAGE CURRENT

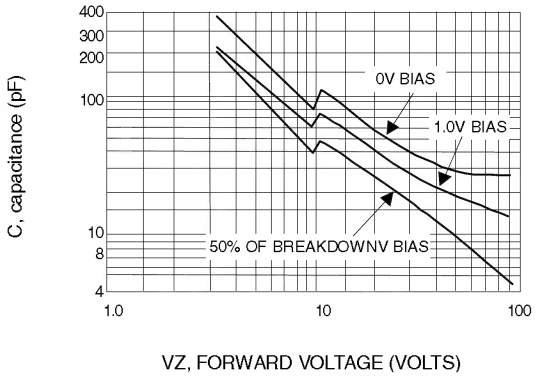

Fig. 9-TYPICAL CAPACITANCE VERSUS V_Z

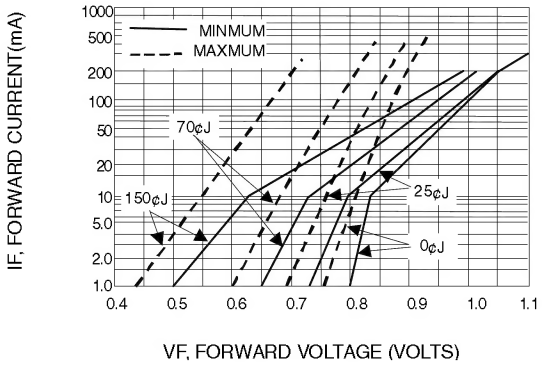

Fig. 10-TYPICAL FORWARD CHARACTERISTICS